REMARKS/ARGUMENTS

Claims 1-21 and 25-31 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the following combination of references: over *Giboney et al.* (U.S. Patent No. 6,318,909) (hereinafter *Giboney*), *Rosenberg et al.* (U.S. Patent No. 6,703,561) (hereinafter *Rosenberg*); *Lee et al.* (U.S. Patent No. 6,821,027) (hereinafter *Lee*); *Hargis et al.* (U.S. Patent No. 6,792,171) (hereinafter *Hargis*); and *Nguyen et al.* (U.S. Patent No. 6,707,140) (hereinafter *Nguyen*).

Claims 1-5, 7, 8, 25, 28, 30, & 31 are amended herein. The applicants point out that the amendments to Claims 1-5, 7, 8, 28, 30, & 31 are typographical and corrective in nature and do not change the scope of the claims. These amendments were not made to avoid any rejection and were solely made to address points made concerning the present objection to those claims. **Claim 25** contains a substantive change in the claim language. Accordingly, based on the above amendments and the following remarks, the applicants respectfully request reconsideration of this application.

General considerations

It should be pointed out that the claims recite a pair of generally parallel circuit boards that include one board configured as an optical port and another as an electrical port. The boards are arranged so that a first board with an optical port faces in one direction with the electrical connections facing in a directly opposite direction. These electrical connections are connected to a second electrical interface board that has pluggable electrical features on its backend. The second board's height can be adjusted as needed (enabling the same basic components to be quickly and easily adapted to a wide range of varying formats and form factors) due to the flexible electrical connector between the boards. Additionally, a support block can be used to orient and connect the photonic devices with the chip package. This is not found in the cited references. Accordingly, it is respectfully submitted that these claims as amended should be allowable.

Rejections Under 35 U.S.C. § 103

Claims 1, 8, 13-15, 17, 18, & 20:

Claims 1, 13-21, 29, & 31 stand rejected under 35 U. S. C. § 103 as being unpatentable over *Giboney et al.* (U.S. Patent No. 6,318,909) (hereinafter *Giboney*) in view of *Rosenberg et al.* (U.S. Patent No. 6,703,561) (hereinafter *Rosenberg*). Amendments have been made to Claim 1 which are intended to address the OBJECTIONS to the claims. No amendments to the scope of the claim have been made. The reasons for this are discussed below.

The applicants point out that the "wherein the first face of the **support block** ... is mounted on the chip package so that chip electrical contacts are electrically coupled to associated traces on the support block". This is a structural distinction between the cited art and the claimed invention. First, *Giboney* mounts the support 29 onto the substrate 47 not the chip package. The Giboney substrate supports all of the chips and also supports the support. This is different from the claimed structure which mounts the "support block" directly onto the chip package. This is illustrated in, for example, Fig. 6 where the block 306 is mounted directly on the chip circuit 304 which is then mounted to the substrate or PCB board. Such a direct connection to solder balls enables higher speed processing and less chance for circuit failure. Thus, *Giboney* is insufficient to establish all elements of the claimed invention. Moreover, the other cited reference, *Rosenberg*, does not include any similar structure.

Additionally, is cited for the position that it includes a second rigid substrate having a "port end" and an "interior end". As recited in Claim 1 "the port end forms the electrical port". There is no indication anywhere in *Rosenberg* that the PCB board of Fig. 4E has a port end. The benefit of the present invention is the provision of an adjustable port end that can be moved to accommodate many different form factors using the same components by merely moving the second board up an down to accommodate the port end electrical connectors of the interface component. The only thing taught or suggested by Rosenberg is that a header assembly 700 can be connected with a PCB using a flex circuit 800 (See, Rosenberg, 13:42-47). There is no teaching or suggestion that the PCB operates as an electrical port for connection to other electrical devices. Especially, there is no teaching that the PCB board can operate as a pluggable electrical port as is the case for some embodiments of the claimed invention.

Absent these limitations the cited combination of references are insufficient to establish a *prima facie* case of obviousness as to Claim 1 (or any claims depending therefrom, i.e., 13-21). Accordingly, the applicant's request that withdrawal of this ground of rejection as to Claim 1. Moreover, for at least the forgoing reasons, the dependent claims are also believed allowable.

Accordingly, the applicant's request that this ground of rejection be withdrawn as to dependent claims 13-21.

As a final point regarding these claims, neither *Rosenberg* nor *Giboney* provide any motivation to combine themselves together beyond what is taught in the Inventor's disclosure. Accordingly, the rejection provides no valid motivation to combine these references.

As for **Claims 29 and 31** the applicants believe that the cited art misses the entire point of the invention. For example, the cited art fails to teach or suggest an adjustable pluggable connection package having "a second circuit board ... wherein the outside end has electrical contacts for connection with **external electrical elements**" (emphasis added). Also, the cited art does not teach or suggest that "the electrical contacts of the second circuit board are arranged at one end of the protective case and wherein the photonic device is positioned at an opposite end of the case and facing in the opposite direction from the electrical contacts". *Quite frankly, the cited combination does not teach a "case" with an optical interface at one end and an electrical connector interface at the other end wherein the height of the electrical connector is adjustable dependent on the form factor of the combined interface. This is at the heart of the invention and is made possible by the presence of the flexible connector for interconnecting the two boards. None of this is set forth in any of the cited art.* Therefore, the cited art fails to establish a *prima facie* case of obviousness as to Claim 29.

Claims 29 & 31 articulate a family of claims that include a pair of substantially parallel circuit boards that include one board configured as an optical port and another as an electrical port. The boards are arranged so that the optical port faces in one direction with the electrical connections facing in a directly opposite direction. Nothing in Rosenberg (which is required for its "second board" teaches directionality. Nor is there any teaching of changeable board height so that it can be adjusted as needed due to the flexible electrical connector between the boards. The cited combination simply misses the point. Accordingly, it is respectfully submitted that the pending rejection of these claims be with drawn and that these claims be allowed.

Claims 2 and 3:

Claims 2 and 3 have been rejected under 35 U. S. C. § 103(a) as being unpatentable over *Giboney* and *Rosenberg*, in view of *Hargis et al* (USPN 6,792,171 hereinafter "*Hargis*"). As explained above with respect to Claim 1 (upon which Claims 2 and 3 depend) *Giboney* and *Rosenberg* do not teach all the claim limitations as required under §103. For example, *Giboney* and *Rosenberg* do not teach a "**support block** ... is mounted on the chip package" or a second rigid substrate having a "port end" and an "interior end configured so that "the port end forms the electrical port". Absent these, and other, limitations the *Giboney* and *Rosenberg* references fails to establish a *prima facie* case of obviousness as to the rejected claims. Nothing in *Hargis* rectifies these shortcomings. Consequently, no reasonable combination of the *Giboney, Rosenberg* and *Hargis* references provides grounds for rejecting the pending claims. Accordingly, the applicant's request that the pending claim rejections concerning claims 2 and 3 be withdrawn.

Claims 4-6 and 8-11:

Claims 4-6 and 8-11 have been rejected under 35 U. S. C. § 103(a) as being unpatentable over *Giboney* and *Rosenberg*, in view of *Nguyen*. As explained above with respect to Claim 1 (upon which Claims 4-6 and 8-11 depend) *Giboney* and *Rosenberg* do not teach all the claim limitations as required under §103. For example, *Giboney* and *Rosenberg* do not teach a "**support block** ... is mounted on the chip package" or a second rigid substrate having a "port end" and an "interior end configured so that "the port end forms the electrical port". Absent these, as well as other, limitations the *Giboney* and *Rosenberg* references fail to establish a *prima facie* case of obviousness as to the rejected claims. Nothing in *Nguyen* rectifies these shortcomings. Consequently, no reasonable combination of the *Giboney, Rosenberg* and *Nguyen* references provides grounds for rejecting the pending claims. Accordingly, the applicant's request that the rejection of claims 4-6 and 8-11 be withdrawn.

Claims 7, 28, and 30:

Claims 7, 28, and 30 have been rejected under 35 U. S. C. § 103(a) as being unpatentable over *Giboney* and *Rosenberg*, in view of *Hargis et al* (USPN 6,792,171 hereinafter "*Hargis*"). As explained above with respect to Claim 1 (upon which Claim 7 depends) *Giboney* and *Rosenberg* do not teach all the claim limitations as required under §103. For example, *Giboney* and *Rosenberg* do not teach a "**support block** ... is mounted on the chip package" or a second rigid substrate having a "port end" and an "interior end configured so that "the port end

forms the electrical port". Absent these, and other, limitations the *Giboney* and *Rosenberg* references fails to establish a *prima facie* case of obviousness as to the rejected claims. Nothing in *Hargis* rectifies these shortcomings. In addition to the shortcomings of the cited art (as explained hereinabove) the cited combination of references does not teach an "electrical converter that is located on the second face of the support block" (regarding dependent Claim 28). In addition, a statement that such a modification "would have been obvious" is impermissible absent a suggestion of such a limitation in the cited art. Accordingly, there is no teaching of this limitation and no motivation to combine the references as "suggested" in the Action. Absent these limitations, the cited combination of references fails to establish a *prima facie* case of obviousness as to the rejected claims. Consequently, no reasonable combination of the *Giboney, Rosenberg* and *Hargis* references provides grounds for rejecting the pending claim 7. Accordingly, the applicant's request that the pending claim rejections concerning claims 7 and 28 be withdrawn.

As for **Claim 30** (which depends on Claim 29) the cited art again fails to teach or suggest an adjustable pluggable connection package having "a second circuit board ... wherein the outside end has electrical contacts for connection with **external electrical elements**" (emphasis added). Also, the cited art does not teach or suggest that "the electrical contacts of the second circuit board are arranged at one end of the protective case and wherein the photonic device is positioned at an opposite end of the case and facing in the opposite direction from the electrical contacts". Again, the cited combination fails to teach a "case" with an optical interface at one end and an electrical connector interface at the other end wherein the height of the electrical connector is adjustable dependent on the form factor of the combined interface. This is made possible by the presence of the flexible connector for interconnecting the two boards. Again, the critical point of utility is absent from the teachings of the cited art or dismissed under the unsupported rubric as "it would have been obvious". However, the Action has set forth no teaching or suggestion in the cited art to support such a contention. None of this is set forth in any of the cited art. In other words, the cited art misses the entire point of the invention. Therefore, the cited art fails to establish a *prima facie* case of obviousness as to Claim 29.

As with base Claim 29, **Claim 30** articulates a family of claims that include a pair of substantially parallel circuit boards that include one board configured as an optical port and another as an electrical port. The boards are arranged so that the optical port faces in one direction with the electrical connections facing in a directly opposite direction. Nothing in Rosenberg (which is required for its "second board" teaches directionality. Nor is there any teaching of changeable board height so that it can be adjusted as needed due to the flexible

electrical connector between the boards. The cited combination simply misses the point. Accordingly, it is respectfully submitted that the pending rejection of these claims be with drawn and that these claims be allowed.

Claims 25 and 27:

Claims 25 and 27 have been rejected under 35 U. S. C. § 103(a) as being unpatentable over *Giboney* and *Rosenberg*, in view of *Lee et al* (USPN 6,821,027 hereinafter "*Lee*"). Claim 25 has been amended to more clearly identify a patentable feature comprising the electrical connector. As explained above with respect to Claim 1 (upon which Claims 2 and 3 depend) *Giboney* and *Rosenberg* do not teach all the claim limitations as required under §103. For example, *Giboney* and *Rosenberg* do not teach a "**support block** ... is mounted on the chip package" or a second rigid substrate having a "port end" and an "interior end configured so that "the port end forms the electrical port". The following language "wherein the port end forms the electrical port **for electrically connecting the opto-electronic module with an external electrical device**" should clarify this distinction. There is simply no teaching in Rosenberg of such an electrical external interface. Accordingly, absent these, and other, limitations the *Giboney* and *Rosenberg* references fail to establish a *prima facie* case of obviousness as to the rejected claims. Nothing in *Lee* rectifies these shortcomings. Consequently, no reasonable combination of the *Giboney, Rosenberg* and *Lee* references provides grounds for rejecting the pending claims. Accordingly, the applicant's request that the pending claim rejections concerning claims 25 and 27 be withdrawn.

Claim 26:

Claim 26 has been rejected under 35 U. S. C. § 103(a) as being unpatentable over *Lee*, in view of *Giboney* and *Hargis*. As explained above with respect to amended Claim 25 (upon which Claim 26 depends) neither *Giboney* nor *Lee* does not teach all the claim limitations as required under §103. Nothing in *Hargis* remedies these shortcomings. Accordingly, the applicant's request that withdrawal of this ground of rejection as to Claim 26.

Conclusion:

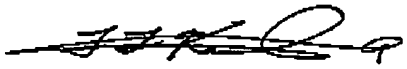
In view of the foregoing amendments and remarks, it is respectfully submitted that the claimed invention as presently presented is patentable over the art of record and that this case is now in condition for allowance.

Accordingly, the applicants request withdrawal of all pending rejections and request reconsideration of the pending application and prompt passage to issuance. The applicants further clarify that any lack of response to any of the issues raised by the Examiner is not an admission by the applicant as to the accuracy of the Examiner's assertions with respect to such issues. Accordingly, applicant's specifically reserve the right to respond to such issues at a later time during the prosecution of the present application, should such a need arise.

As always, the Examiner is cordially invited to telephone the applicants representative to discuss any matters pertaining to this case. Should the Examiner wish to contact the undersigned for any reason, the telephone numbers set out below can be used.

Respectfully submitted,

BEYER WEAVER & THOMAS, LLP



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